

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 7, 12, 13, 17, 21, 26-31, 33, 34, 35, 53, 55, 57, and 59 and ADD new claims 62 and 63 in accordance with the following:

1. (CURRENTLY AMENDED) A method of displaying a program progress time on a signal receiver which receives and processes program guide information containing a program schedule, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information;

storing the program guide information;

setting a command of the signal receiver which is commonly usable by a user as a display command to display time information about a currently viewed program; and

displaying, in a numerical format, the time information about the currently viewed program together with the currently viewed program when the user issues the display command set in said setting a command,

the time information comprising a beginning time with respect to the currently viewed program, a program terminating time of the currently viewed program, and a current time with respect to the currently viewed program;

displaying a display bar representing a total program broadcasting time of the currently viewed program, the beginning time being below a left-most end of the display bar, the program terminating time being below a right-most end of the display bar, and the current time being below the display bar at a position corresponding to the program progress time; and

automatically displaying next program information when a remaining program time reaches a preset time,

wherein the time information and the display bar are displayed transiently for a predetermined time when the user issues the display command set in said setting the command

and disappear after said predetermined time has elapsed, without a user input after the user issues the display command.

2-4. (CANCELLED)

5. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 1, wherein the time information includes the program progress time determined by subtracting the beginning time from the current time.

6. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 5, wherein the time information further comprises the remaining program time determined by subtracting the current time from the program terminating time.

7. (CURRENTLY AMENDED) A method of displaying a program progress time on a signal receiver which receives and processes program guide information containing a program schedule, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information;

storing the program guide information;

automatically displaying time information, in a numerical format, about a currently viewed program on the signal receiver when a user issues a display command the time information including a beginning time with respect to the currently viewed program, a program terminating time of the currently viewed program, and a current time with respect to the currently viewed program;

displaying a display bar representing a total program broadcasting time of the currently viewed program, the beginning time being below a left-most end of the display bar, the program terminating time being below a right-most end of the display bar, and the current time being below the display bar at a position corresponding to the program progress time; and

automatically displaying next program information when a remaining program time reaches a preset time,

wherein the time information and display bar are displayed transiently for a predetermined time when the user issues the display command and disappear after said predetermined time has

elapsed, without a user input after the user issues the display command.

8. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 7, wherein the time information further comprises a percentage of the program progress time as compared with the total program broadcasting time calculated by subtracting the beginning time from the program terminating time.

9. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 8, wherein the time information further comprises a percentage of the remaining program time as compared with the total program broadcasting time.

10. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 1, wherein the commonly usable command of the signal receiver is a command for a channel up/down.

11. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 1, wherein the commonly usable command of the signal receiver is a command for a remote controller event.

12. (CURRENTLY AMENDED) A method of displaying a program progress time on a signal receiver which receives and processes program guide information containing a program schedule, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information;

storing the program guide information;

displaying time information, in a numerical format, about a currently viewed program on the signal receiver when a user issues a display command set the time information including a beginning time with respect to the currently viewed program, a program terminating time of the currently viewed program, and a current time with respect to the currently viewed program;

displaying a display bar representing a total program broadcasting time of the currently viewed program, the beginning time being below a left-most end of the display bar, the program terminating time being below a right-most end of the display bar, and the current time being below

the display bar at a position corresponding to the program progress time; and

judging that the command for displaying the program progress time is issued by the user so as to automatically display the program progress time at a preset time set by the user prior to a program terminating time of the currently viewed program,

wherein the time information and display bar are displayed transiently for a predetermined time when the user issues the display command and disappear after said predetermined time has elapsed, without a user input after the user issues the display command.

13. (CURRENTLY AMENDED) A method of displaying a program progress time in a signal receiver which receives and processes program guide information containing a program schedule, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information;

receiving and storing the program guide information;

displaying a program terminating time of the currently viewed program;

determining a total program broadcasting time of a currently viewed program by subtracting a program beginning time from the program terminating time of the currently viewed program when a user issues a command requesting the displaying of the program progress time of the currently viewed program;

determining the program progress time by subtracting the beginning time from a current time;

displaying a display bar representing the total program broadcasting time, including the current time; and

automatically displaying the display bar so as to indicate a position on the display bar corresponding to the program progress time at a preset time set by the user,

wherein the program terminating time, total program broadcasting time, and display bar are displayed transiently for a predetermined time when the user issues the command and automatically disappear after said predetermined time has elapsed, without a user input after the user issues the command.

14. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as

claimed in claim 13, further comprising displaying the display bar by distinguishing between a portion of the program progress time elapsed and a remaining program progress time portion.

15. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 14, further comprising displaying the program progress time on a portion of the display bar between a starting position of the display bar and a position corresponding to the program progress time on the display bar.

16. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 14, comprising displaying the remaining program progress time on a portion of the display bar between a position corresponding to the program progress time and an end position of the display bar.

17. (CURRENTLY AMENDED) A method of displaying a program progress time of a currently viewed program of a signal receiver, the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the program
~~receiving program~~ guide information including a program schedule having the currently viewed program; and

automatically displaying the program progress time of the currently viewed program simultaneously with the currently viewed program in response to a command from a user to perform a function other than displaying the program progress time upon receipt of the command,

the program progress time including a current time,

the command being one of an activating a channel up/down key and setting of a preset time prior to a program termination of the currently viewed program,

wherein the program progress time is displayed transiently for a predetermined time in response to the command from the user and automatically disappears after said predetermined time has elapsed, without a user input after the command from the user.

18-19. (CANCELLED)

20. (PREVIOUSLY PRESENTED) The method as claimed in claim 17, further

comprising:

generating a setup display for the user to designate ones of a plurality of commands to function as the command to perform the function other than displaying the program progress time upon receipt of the command; and

receiving inputs from the user designating the ones of the plurality of the commands to function as the command to perform the function other than displaying the program progress time upon receipt of the command.

21. (CURRENTLY AMENDED) A method of displaying a program progress time of a currently viewed program of a signal receiver, the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the receiving program guide information including a program schedule having the currently viewed program;

displaying a program progress time including a current time of the currently viewed program in response to a command from a user to perform a function other than displaying the program progress time upon receipt of the command; and

automatically displaying next program information of a next program on a same channel as the currently viewed program at a preset time prior to the program termination of the currently viewed program,

wherein the program progress time and next program information are displayed transiently for a predetermined time in response to the command from the user and automatically disappear after said predetermined time has elapsed, without a user input after the command from the user.

22. (PREVIOUSLY PRESENTED) The method as claimed in claim 17, further comprising:

generating a setup display for the user to designate ones of a plurality of commands to function as the command to perform the function other than displaying the program progress time upon receipt of the command, wherein the plurality of commands further comprises displaying the program progress time at the preset time prior to a program termination of the currently viewed program, and for the user to designate another command to display next program information on a same channel as the currently viewed program at the preset time;

receiving inputs from the user designating whether the ones of the plurality of the

commands are to function as the command to perform the function other than displaying the program progress time upon receipt of the command; and

displaying the next program information at the preset time if the first and the another commands are set by the user positively.

23. (PREVIOUSLY PRESENTED) The method as claimed in claim 17, wherein the program progress time further includes a program beginning time, and a program termination time of the currently viewed program.

24. (PREVIOUSLY PRESENTED) The method as claimed in claim 23, wherein the program progress time further includes a channel number, a name of a broadcast station and a title of the currently viewed program.

25. (PREVIOUSLY PRESENTED) The method as claimed in claim 23, wherein said displaying comprises displaying the program beginning time at a start of a display bar, the program termination time at an end of the display bar, and the current time at a position of the display bar corresponding to a percentage of time elapsed versus a total time of the currently viewed program.

26. (CURRENTLY AMENDED) A method of displaying a program progress time including a program beginning time, a current time, and a program terminating time of a currently viewed program of a signal receiver, the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the receiving program guide information including a program schedule having the currently viewed program;

displaying the program progress time of the currently viewed program simultaneously with the currently viewed program automatically at a preset time wherein said displaying the program progress time further comprises displaying the beginning time at a start of a display bar, the program termination time at an end of the display bar, a first percentage number, comprising a numeral, of the time elapsed and a second percentage number, comprising a numeral, of a time remaining versus the total time of the currently viewed program and the current time at a position of the display bar corresponding to a percentage of time elapsed versus a total time of the

currently viewed program,

wherein the program progress time, first percentage number, and second percentage number are displayed transiently for a predetermined time when a user issues a display command set in said setting a command and disappear after said predetermined time has elapsed.

27. (CURRENTLY AMENDED) A method of displaying a program progress time including a program beginning time, a current time, and a program terminating time of a currently viewed program of a signal receiver, the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the receiving program guide information including a program schedule having the currently viewed program; and

displaying the program progress time of the currently viewed program in response to a command from a user to perform a function other than displaying the program progress time upon receipt of the command wherein said displaying the program progress time further comprises displaying the beginning time at a start of a display bar, the program termination time at end of the display bar, and the current time at a position of the display bar corresponding to a percentage of time elapsed versus a total time of the currently viewed program and the command is to display the program progress time automatically at a preset time prior to a program termination of the currently viewed program,

wherein the program progress time, a first percentage number, and a second percentage number are displayed transiently for a predetermined time in response to the command from the user and automatically disappear after said predetermined time has elapsed, without a user input after the command.

28. (CURRENTLY AMENDED) A device for displaying a program progress time, comprising:

a receiving unit to ~~receive a program and a program guide containing a program schedule which includes information on a TV program~~ receive an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

a processor to parse program information of a plurality of television programs from the received signal, to retrieve program guide information from the parsed program information, the program guide containing a program schedule which includes information on a TV program, and to produce data for displaying the program progress time transiently for a predetermined time in response to a command from a user;

a video output unit to mix video data of the program and said data for displaying the program progress time of the program, to output a resulting signal; and

a display to display the resulting signal and next program information automatically at a preset remaining time of the program,

the program progress time including a program beginning time of the TV program, a progress percentage number, comprising a numeral, and a current time.

29. (CURRENTLY AMENDED) A device for displaying a program progress time the program progress time including a current time and a progress percentage number, comprising a numeral, comprising:

a receiving unit to receive a TV program and a TV program guide containing a program schedule which includes information on the TV program;

a user interface to enable entry of a command from a user requesting display of the program progress time;

an audio output unit to generate an audio signal of the TV program;

a processor to produce On-Screen-Graphic data for displaying the program progress time transiently for a predetermined time in response to the command from the user and based upon the program schedule;

a video output unit to mix video data of the TV program and On-Screen-Graphic data of the TV program, to output a resulting signal; and

a display to automatically display the resulting signal wherein the command is one of an activating a channel up/down key and setting of a preset time prior to a program termination of a currently viewed program.

30. (CURRENTLY AMENDED) A device for displaying a program progress time the program progress time including a current time and a progress percentage number, comprising a numeral, comprising:

- a receiving unit to receive a TV program and a TV program guide containing a program schedule which includes information on the TV program;

- a user interface to enable entry of a command from a user requesting display of the program progress time;

- an audio output unit to generate an audio signal of the TV program;

- a processor to produce On-Screen-Graphic data for displaying the program progress time transiently for a predetermined time in response to the command from the user and based upon the program schedule;

- a video output unit to mix video data of the TV program and On-Screen-Graphic data of the TV program, to output a resulting signal; and

- a display to automatically display the resulting signal wherein said processor produces ON-Screen Graphic data for displaying next program information of a next program on a same channel as the TV program at a preset time prior to a program termination of the TV program.

31. (CURRENTLY AMENDED) A method of displaying a program progress time of a currently viewed program comprising:

- issuing a user-initiated display command;

- displaying a program terminating time of the currently viewed program and a current time in response to the display command automatically at a preset time set by the user prior to a program terminating time of the currently viewed program; and

- displaying next program information automatically at the preset time,

- wherein the program progress time is displayed transiently for a predetermined time in response to the display command and automatically disappears after said predetermined time has elapsed, without a user input after the user initiates the display command.

32. (CANCELLED)

33. (CURRENTLY AMENDED) A method of displaying a program progress time on a signal receiver which receives and processes program guide information containing a program schedule, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the program guide information including a program schedule having the currently viewed program;

storing the program guide information;

displaying time information about a currently viewed program together with the currently viewed program on the signal receiver when a user issues a display command set, the time information including a beginning time, a current time, and a terminating time of the currently viewed program; and

automatically displaying next program information when the time information reaches a preset terminating time,

wherein said time information is displayed transiently for a predetermined time when the user issues the display command and automatically disappears after said predetermined time has elapsed, without a user input after the user issues the display command.

34. (CURRENTLY AMENDED) A method of outputting a program progress time information to a display, comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the program guide information including a program schedule having the currently viewed program;

~~receiving program guide information containing a program schedule;~~

storing the program guide information;

outputting the program progress time information about a currently viewed program together with the currently viewed program on the display when a user issues a display command set,

the program progress time information including a beginning time, a current time, and a terminating time of the currently viewed program; and

displaying the time information and next program information automatically when the current time reaches a preset terminating time of the currently viewed program,

wherein said time information is displayed transiently for a predetermined time when the user issues the display command and automatically disappears after said predetermined time has elapsed, without a user input after the user issues the display command.

35. (CURRENTLY AMENDED) A method of displaying a program progress time on a signal receiver which receives and processes program guide information containing a program schedule, the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information, the program guide information including a program schedule having the currently viewed program;

storing the program guide information; and

displaying time information about a currently viewed program together with the currently viewed program and next program information automatically at a preset terminating time of the currently viewed program, the time information comprising a beginning time with respect to the currently viewed program, the program progress time including a current time,

wherein said time information is displayed transiently for a predetermined time in response to a display command set by a user and automatically disappears after said predetermined time has elapsed, without a user input after the user sets the display command.

36. (CANCELED)

37. (WITHDRAWN) A method of displaying time-wise progression information of a predetermined program in a broadcast receiver, said method comprising:

receiving electronic program guide information;

storing said electronic program guide information;

receiving a user command to display said time-wise progression information of said predetermined program; and

displaying a graphical representation of elapsed time and time information of the predetermined program in accordance with said electronic program guide information and in response to said user command,

wherein said time information comprises a beginning time information and termination time information of said predetermined program.

38. (WITHDRAWN) The method as claimed in claim 37, wherein said broadcast receiver is a television receiver.

39. (WITHDRAWN) The method as claimed in claim 38, wherein said predetermined program is a currently viewed program.

40. (WITHDRAWN) The method as claimed in claim 39, wherein said beginning time information and said termination time information are disposed on opposite sides of said graphical representation.

41. (WITHDRAWN) The method as claimed in claim 40, wherein said opposite sides are left and right sides of said graphical representation.

42. (WITHDRAWN) The method as claimed in claim 39, wherein said time-wise progression information is superimposed with video information of said currently viewed program.

43. (WITHDRAWN) The method as claimed in claim 42, wherein said time-wise progression information is formed as an OSG.

44. (WITHDRAWN) The method as claimed in claim 42, wherein said time-wise progression information further includes a broadcast channel number, broadcast station name and program name of said currently viewed program.

45. (WITHDRAWN) The method as claimed in claim 44, further comprising turning off said time-wise progression information after a predetermined time.

46. (WITHDRAWN) The method as claimed in claim 44, wherein said graphical representation is a progress bar indicating a time-wise progression of said currently viewed program.

47. (WITHDRAWN) The method as claimed in claim 46, wherein said time-wise progression is indicative of elapsed time since said beginning time.

48. (WITHDRAWN) The method as claimed in claim 47, wherein said time information

further includes a current time which corresponds to said time-wise progression of said graphical representation.

49. (WITHDRAWN) The method as claimed in claim 48, wherein said time-wise progression information further includes a percentage number of a total program time of said currently viewed program.

50. (WITHDRAWN) The method as claimed in claim 49, further comprising displaying next program information when a remaining program time reaches a predetermined amount.

51. (WITHDRAWN) The method as claimed in claim 37, wherein said user command is either a channel up or a channel down command.

52. (WITHDRAWN) The method as claimed in claim 37, wherein said user command is a predetermined remote controller event.

53. (CURRENTLY AMENDED) A display device which displays program progress information of a current program, the display device comprising:

a receiver which receives the current program and at least one of a beginning time of the current program and a terminating time of the current program;

a display which displays the current program, and the program progress information of the current program, wherein the program progress information includes the beginning time of the current program, a current time, the terminating time of the current program and a progress bar indicating a progress time of the current program,

wherein the beginning time of the current program, the current time, and the terminating time of the current program are displayed in a numerical format, and

wherein the progress bar has a first end and a second end, and the beginning time is displayed in the numerical format at the first end of the progress bar and the terminating time is displayed in the numerical format at the second end of the progress bar, and the progress time of the current program is displayed on the progress bar between the first end and the second end,

wherein the program progress information is displayed transiently for a predetermined time in response to a display command set by a user and automatically disappears after said

predetermined time has elapsed, without a user input after the user sets the display command.

54. (PREVIOUSLY PRESENTED) The display device as claimed in claim 53, further comprising a microprocessor to determine a remaining time of the current program, and the remaining time is displayed as a first color, wherein the progress time of the current program is displayed as a second color and wherein the first color and the second color are displayed on the progress bar.

55. (CURRENTLY AMENDED) A method of displaying program progress information of a current program, the method comprising:

receiving a current program and at least one of a beginning time of the current program and a terminating time of the current program;

displaying the current program, and the program progress information of the current program, wherein the program progress information includes the beginning time of the current program, a current time, the terminating time of the current program and a progress bar indicating a progress time of the current program,

rein the beginning time of the current program, the current time, and the terminating time of the current program are all displayed in a numerical format, and

wherein the progress bar has a first end and a second end, and the beginning time is displayed in the numerical format at the first end of the progress bar and the terminating time is displayed in the numerical format at the second end of the progress bar, and a length of the program is displayed on the progress bar between the first end and the second end

wherein the program progress information is displayed transiently for a predetermined time in response to a display command set by a user and automatically disappears after said predetermined time has elapsed, without a user input after the user sets the display command.

56. (PREVIOUSLY PRESENTED) The method as claimed in claim 55, further comprising determining a remaining time of the current program, and displaying the remaining time as a first color on the progress bar, and displaying the progress time of the current program as a second color.

57. (CURRENTLY AMENDED) A display device which displays a current program, time information of the current program, and program progress information indicating a progress

of the current program, the device comprising:

a receiver which receives the current program and at least one of a beginning time of the current program and a terminating time of the current program;

a display which displays the current program, the program progress information and the time information, wherein the time information is displayed in a numerical format,

wherein the time information includes at least one of the beginning time, a current time and the terminating time,

wherein a type of the time information corresponds to which of the beginning time, the current time and the terminating time is displayed as the time information, and

wherein the program progress information includes a progress bar which indicates the progress of the current program, and wherein the time information is displayed in a location relative to the progress bar, such that the location depends upon the type of the time information,

wherein the program progress information is displayed transiently for a predetermined time in response to a display command set by a user and automatically disappears after said predetermined time has elapsed, without a user input after the user sets the display command.

58. (PREVIOUSLY PRESENTED) The display device according to claim 57, wherein each of the beginning time, the current time and the terminating time is displayed in a respective location relative to the progress bar, such that the respective location depends upon the type of the at least one time information.

59. (CURRENTLY AMENDED) A method of displaying a current program, time information of the current program, ~~and program progress information of the current program indicating a progress of the current program in a television receiver,~~ the method comprising:

receiving an Advanced Television Standards Committee (ATSC) digital television signal in a transport stream packet transmitted from a broadcasting station;

parsing program information of a plurality of television programs from the received signal;

retrieving program guide information from the parsed program information;

identifying a start time of a current television program based on the retrieved program guide information; and

processing video data of the current television program and the program guide information including at least the identified start time to be applied to a display.

~~receiving the current program and at least one of a beginning time of the current program and a terminating time of the current program;~~

~~displaying the current program, the program progress information and the time information, wherein the time information is displayed in a numerical format,~~

~~wherein the time information includes at least one of the beginning time, a current time and the terminating time, and at least one of the beginning time, the current time and the terminating time is displayed in the numerical format,~~

~~wherein a type of the time information corresponds to which of the beginning time, the current time and the terminating time is displayed as the time information, and~~

~~wherein the program progress information includes a progress bar which indicates the progress of the current program, and wherein the time information is displayed in a location relative to the progress bar, such that the location depends upon the type of the time information,~~

~~wherein the program progress information is displayed transiently for a predetermined time in response to a display command set by a user and automatically disappears after said predetermined time has elapsed.~~

60. (PREVIOUSLY PRESENTED) The display device according to claim 57, wherein the display displays at least one of the beginning time, the current time and the terminating time, and each is displayed in a respective location relative to the progress bar, such that the respective location depends upon the type of the at least one time information.

61. (PREVIOUSLY PRESENTED) A method of displaying a program progress time as claimed in claim 1, further comprising moving the current time relative to the display bar according to the program progress time.

62. (NEW) The method of claim 59, further comprising:
converting an IF signal from a tuner of the receiver into a baseband signal; and
converting the baseband signal into channel signal to reconstruct a transport stream (TS).

63. (NEW) The method of claim 62, further comprising:
identifying time information indicating a length of a television program based on the retrieved program guide information.